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(56) Documents Cited

EP 0239273 A2

US 5342093 A

US 4727667 A

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(54) Overlapping label and a method of making such a label

(57) An overlapping label 10 comprises a substrate with a leading end 12 and a trailing end 14, a first release coating 16 on one side of the substrate, an adhesive coating 18 on the other side of the substrate, and a second release coating 20 covering a portion of the adhesive coating towards the trailing end 14. In use, the label is wrapped at least twice around a container 26 with the uncovered adhesive coating in contact with a complete circumference of the container. The second release coating reduces the adhesion of the covered portion of the adhesive coating so that an overlapping portion of the label is peelable but also resealable. The label may be trapezoidal in shape (see figs 9-12) and may have at least one line of perforation 22. The second release coating may be discontinuous or formed as a pattern of dots. A label containing a fragrance-emitting compound between overlapping portions and a method of making overlapping labels are also disclosed.

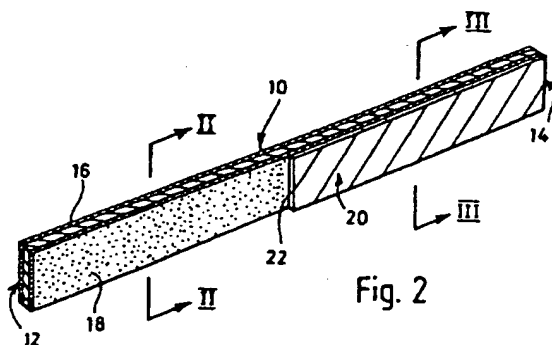


Fig. 2

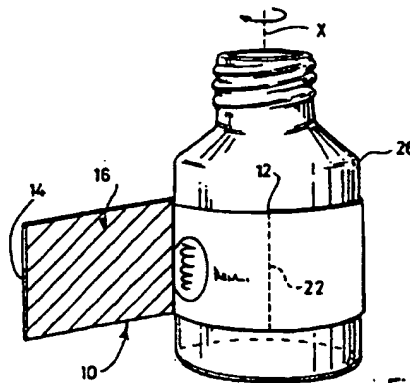


Fig. 5

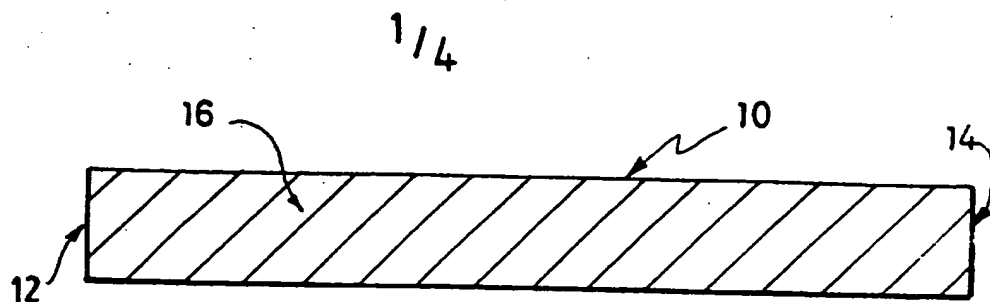


Fig. 1

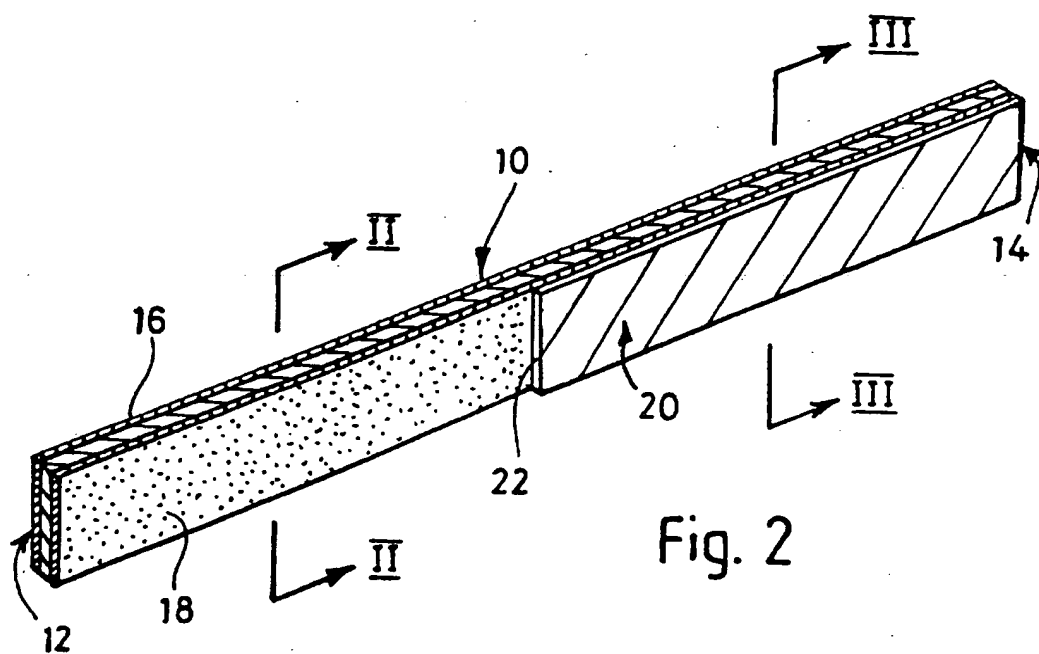


Fig. 2

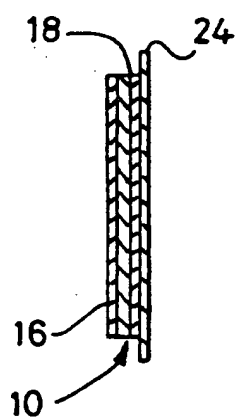


Fig. 3

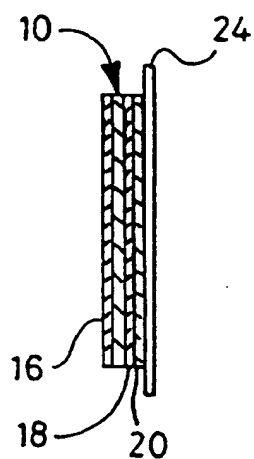


Fig. 4

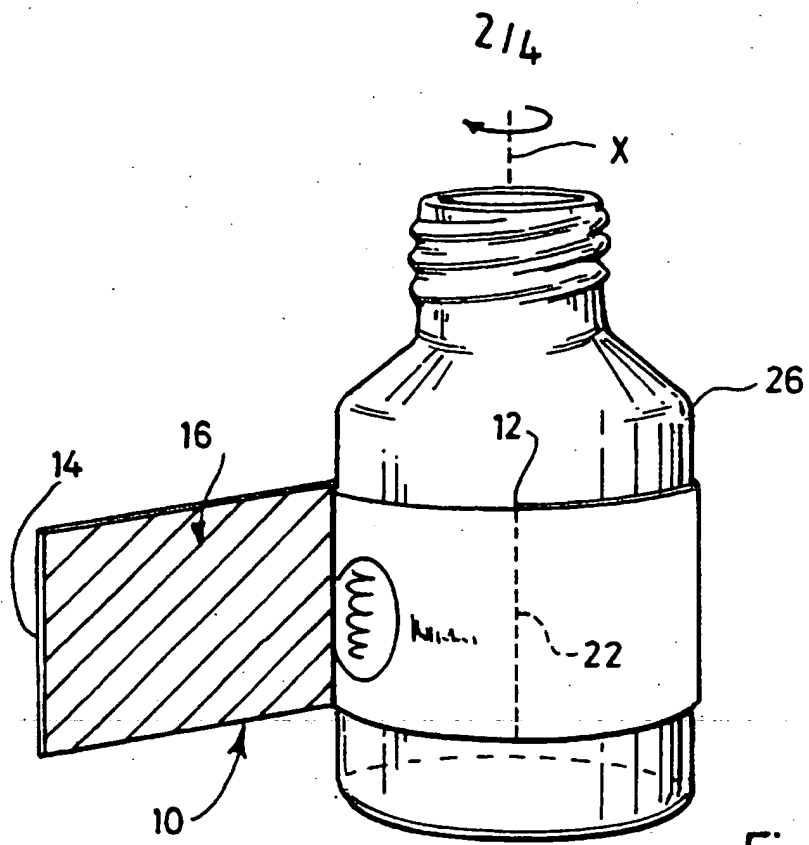


Fig. 5

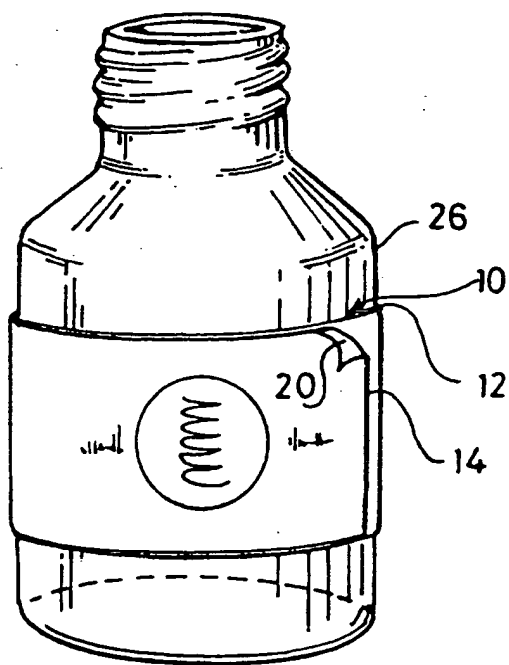


Fig. 6

3/4

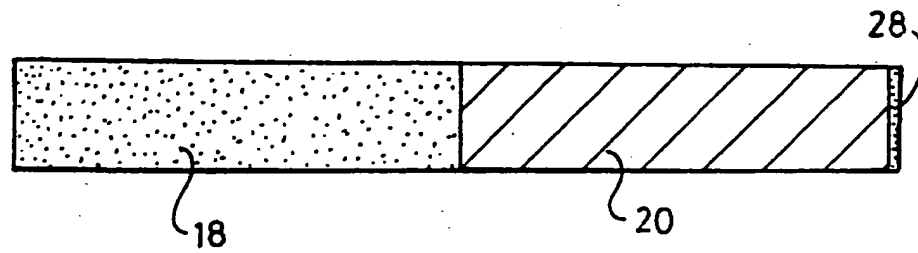


Fig. 7

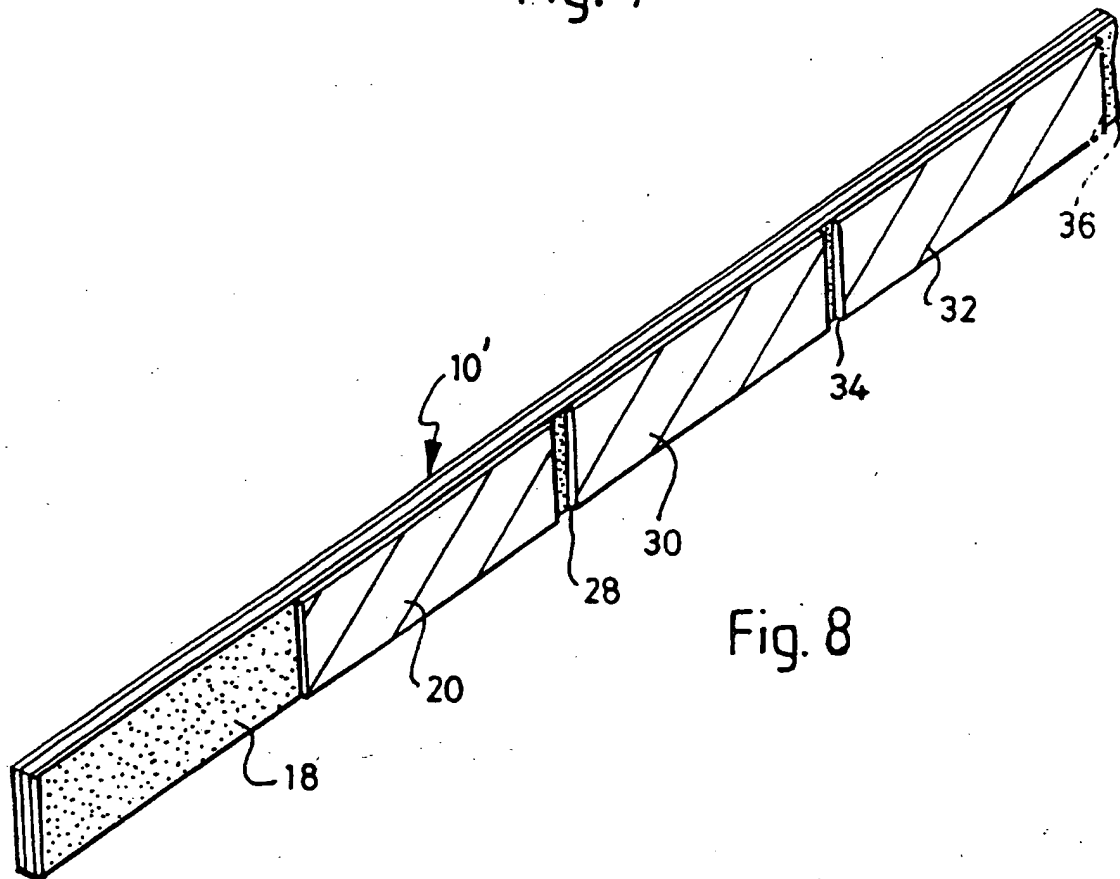


Fig. 8

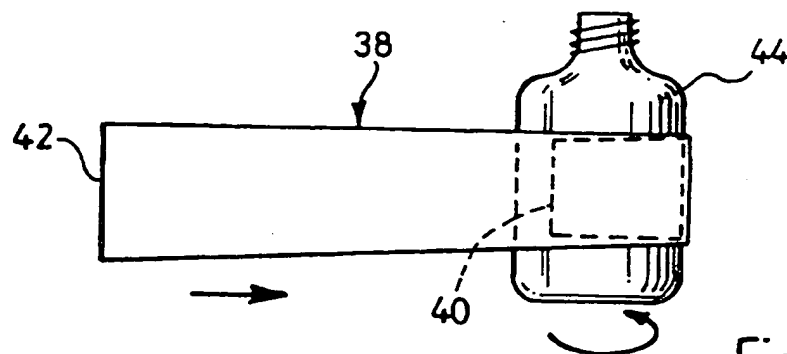


Fig. 9

4/4

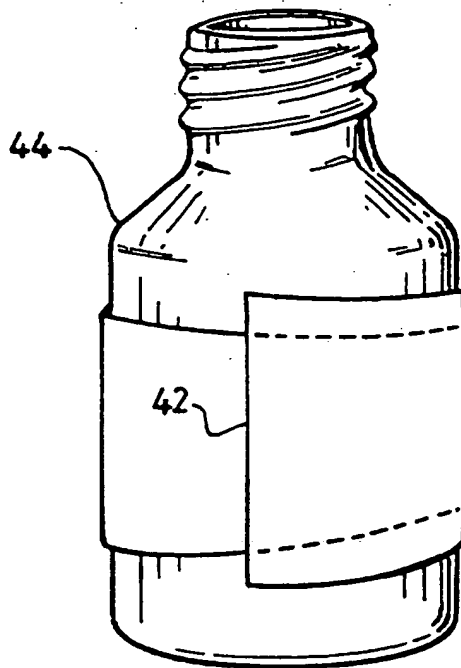


Fig. 10

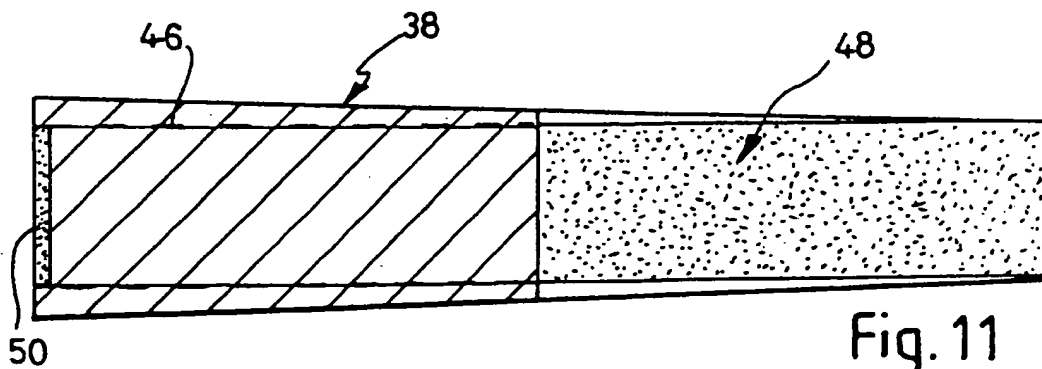


Fig. 11

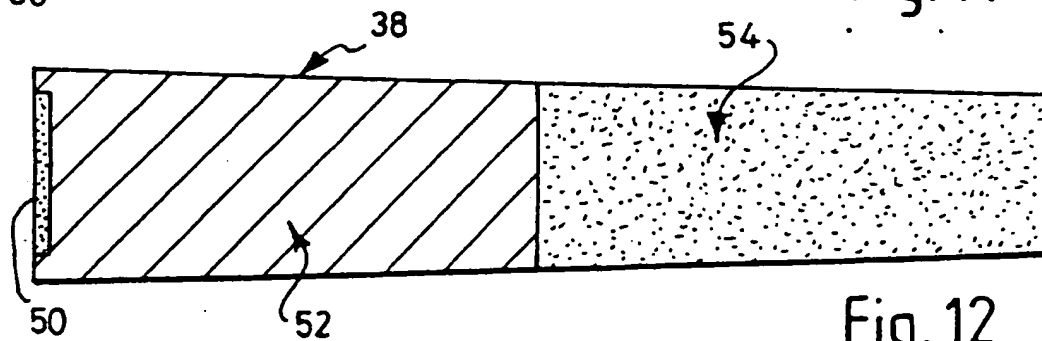


Fig. 12

C424/F

Title: Improved label

Field of invention

This invention concerns self-adhesive labels designed to be wrapped more than once around an article to be labelled and in which subsequent wrappings overlay the previous layers of label already wrapped therearound.

Background to the invention

EP 0463193 describes one form of such label designed to be wrapped at least once but not more than twice around a container. In this design the external facing surface of that part (and only that part) of the label which forms the first container contacting portion of the label, is printed with an adhesive-repellant smooth layer of silicon lacquer, so that the self-adhesive layer which exists over the whole of the other inside-facing surface of the label, is prevented from forming a reliable adhesive bond over the first layer of label. This enables the outer layer to be peeled away from the inner layer once leaving the latter securely bonded to the container.

One of the purposes of providing peel-away portions or flaps is to allow information below the flap to be read but it is often desirable that the flap can be reliable re-sealed over the lower layers of label which remain attached to the container. It has been found that the flaps of labels constructed as described in EP 0463193 cannot reliably be re-sealed many times and the adhesive properties of the underside of the peelable flap reduce with use.

Additionally it has been observed that if a label constructed in accordance with EP 0463193 is left unpeeled for a long time, the release characteristics of the printed coating on the outer

flap seem to decrease and the flap can become permanently bonded to the surface of the lower layer of label. This means that when an attempt is made to peel the flap, the latter either tears or brings away with part of the lower layer of label. This obscures or destroys any printing which would have been revealed by the removal of the flap.

The mechanised application of labels to containers as aforesaid involves the affixing of the leading edge of the label to the container wall and effecting relative rotational movement of the container and the label so that the label is drawn around the container as the latter rotates with the self-adhesive surface of the label making contact with the container. If the label is longer than the periphery of the container, continued rotation of the container causes the label to begin to wrap around itself and this continues until the end of the label is reached. The economic reasons this process has to be performed at high speed and if a rotating container wobbles about its axis of rotation or there is any tendency of the label to wander relative to the container during application, a spiral wrapping of the label around the container can result. If the label is of such a length that it merely extends around part or just completely around the perimeter of the container, any shallow spiral so obtained will in general barely be noticeable. However where the label is to be wrapped twice or more times around the container, the shallow helical or spiral path of the label around the container will be very visible.

In some applications, it is desirable for the outer flap to be wholly removable from the rest of the label which remains in place on the container. Thus in the case of packaged foodstuffs, the outer label flap may have preparation or cooking information printed on its rear face and to facilitate reading and following this information, this part of the label is preferably detached from the container. It is equally desirable that the label left exposed after this outer flap has been detached shall convey the same impression and bear the

same information as appeared on the outside surface of the outer label portion before it was removed so that the container is recognised for what it is when viewed in a larder or cupboard. It is thus important that the removal of the outer flap can be effected without in any way spoiling, damaging, ripping or removing or obscuring printed matter on the outer surface of the lower label portion which remains attached to the container. Labels constructed in accordance with the prior art do not provide any such guarantee, particularly if the packaging has been left intact in a shop or warehouse for a considerable period of time before the packaged product is purchased by the end user.

With these problems and disadvantages of known designs of label in mind, it is an object of the present invention to provide a label in which the outer layer does not with time become too securely bonded to the lower layer of label from which it is to be peeled.

It is also an object of the present invention to provide a label in which the outer flap can be peeled away but equally reliably replaced and repositioned on the lower label portion, many times.

It is also an object of the invention to provide a label which will tend to counteract any misalignment as the label is wound around a container.

It is also an object of the invention to provide a label as aforesaid having further advantages and benefits as will hereinafter be described.

Summary of the invention

In a label which is to be secured around a container, whose length is equal to at least twice the perimeter of the container, which includes a leading end which is first applied to the container and a trailing end which is the last part of the label to be secured in place, in which the face thereof which is to make contact with the container includes a first coating of adhesive extending from the leading to the trailing end of the label, and in which the opposite face of the label includes a second coating of an adhesive-repellant material so as to reduce the tendency of the tacky underside of the label to stick to the outer surface of the label as it is wrapped around itself, the invention provides a third uniform coating applied to at least part of the surface of the first adhesive coating, between the trailing end of the label and a point spaced from the leading end of the label by a distance equivalent to the perimeter of the container around which the label is to be secured, the thickness and/or physical and/or chemical characteristics of the material forming the said third coating being selected so as to permanently alter and reduce the attraction for the second coating material of that region of the first coating coated with the said third coating.

The invention thus provides a label which if wrapped upon itself is readily peelable and resealable since the tack properties of the adhesive material making contact with the label material are controlled and stabilised by the presence of the said third coating and can be adjusted during manufacture to just the required amount, irrespective of the strength of the adhesive applied as the first coating.

Typically the third coating extends over the full width of the label but not completely to the trailing end of the label so that a narrow band of uncoated adhesive is left exposed on the underside of the label for more firmly securing the trailing end of the label to the coated surface of the label already

wrapped around the container.

If the label is to be wrapped more than twice around the container, preferably the said third coating is selectively applied to the adhesive coating so as to leave exposed narrow transversely extending strips of adhesive at selected distances along the length of the label, to define a series of protected regions between the transversely extending exposed strip adhesive, so that the label can be progressively removed from itself back to each exposed strip, in turn, region by region, if desired.

Thus first of all the outermost protected region can be removed from the wrapped around label, back to the first strip of exposed adhesive, which because of its good bonding to the surface below it will remain adhesively bonded thereto. If desired, this first region of label can be torn from the remainder of the label along the length of the transversely extending strip-bond produced by the exposed adhesive strip. The next such region can be removed in a similar manner by tearing it away along the last mentioned strip bond, and peeling it back to the next transversely extending strip bond, and repeating the process until the last protected region has been removed, leaving the unprotected region of label still firmly secured around the container.

To facilitate the removal of each such region of the label, one or more lines of perforations or semi-cuts or other separation facilitation means may be provided adjacent or in line with each of the transversely extending strips of exposed adhesive.

According to a particularly preferred feature of the invention, at least one small end region of each transversely extending strip of exposed adhesive, is itself coated with the said third coating material so as to prevent the said end region of the strip of exposed adhesive from firmly bonding to the label material therebelow. This creates a liftable tab to facilitate

the lifting and separation of the next protected region from the label below.

Where semi-cuts or perforations are provided, these conveniently extend transversely parallel to the strip of exposed adhesive on the underside of the label and in one arrangement a single line of semi-cut or perforations is located approximately half way across the width of the strip of exposed adhesive, measured in the length direction of the label. In another arrangement a line of semi-cut or perforations is provided on each longer edge of each said strip.

A particularly advantageous aspect of the invention is that it permits a stronger adhesive to be used for bonding the label to the container than would otherwise be the case thereby more reliably guaranteeing the bond between the label and the container to which it is to be attached.

By selecting an appropriate material and/or thickness for the said third coating so the protected regions of the adhesive coating can be arranged to have just the required degree of permanent tackiness, as to always lightly adhere to the coating on the outer surface of the label to ensure that the second and subsequent layers or label wrapped around the container remain in place, and remain flat and smooth, whilst always permitting the label to be reliably peeled away and re-sealed, many times if required.

A preferred combination of materials comprises a thin plastics film such as PVA or PVC, one surface of which is uniformly coated with S660 adhesive and the other surface of which is uniformly coated with a so-called release agent such as Emiflex as supplied by ICI Coatings of Hull, England, and a thin uniform coating of Emiflex material is applied to the surface of the adhesive as the said third coating.

The thickness of the Emiflex coating may be determined by experiment, but in practice it has been found that a relatively thin coating is sufficient, and coatings of the order of a few microns thickness have been found to be adequate.

In general it is important for the third coating to be a continuous film over the adhesive, at least between the exposed regions of the adhesive.

If the tack of the exposed region is also to be controlled, the third coating material may also be applied to the adhesive in those regions, but to a reduced thickness or as an incomplete film such as a pattern of dots.

The adhesion control required by the invention can also be achieved by selecting for the adhesive one having high and low tack components, uniformly distributed throughout the material, and for the material for the said third coating one which contains a component which substantially neutralises the high tack component of the adhesive but leaves the lower tack component substantially unaffected.

Alternatively material selected for the adhesive is one which chemically reacts with the material selected for the said third coating so that the tack producing component of the adhesive is significantly reduced by the chemical reaction between it and the material forming the said third coating, so that the tackiness of the adhesive is significantly reduced in those areas to which the said third coating is applied.

The preferred adhesive is S660 and this adhesive dries by free radical polymerisation. The adhesive also contains unsaturated hydrocarbons which are the primary agent generating the adhesiveness of the material.

Unsaturated hydrocarbons will tend to cross-link with a material such as Emiflex in the presence of ultra-violet light

and the invention provides a method of forming a label as aforesaid in which after the said third coating is applied, the label material is subjected to ultra-violet light to assist in curing the Emiflex and cross-linking the Emiflex with the unsaturated hydrocarbons present in the adhesive.

By coating the adhesive with a material which itself is a release agent and which in appropriate quantities tends to reduce the tackiness of the label, so the risk of unwanted bonding between layers of label material is substantially eliminated.

Additionally by coating both surfaces of the label material which are to come into contact as one part of the label is wrapped around another, with a material in accordance with the invention, the risk that delamination of label material will occur as the label is peeled away, is significantly reduced.

This is quite distinct from prior proposals in which a full strength adhesive coating is left fully exposed, and the barrier to prevent permanent adhesion between the adhesive layer and an inner surface of the label material solely resides on a barrier coating on the latter, so that if the properties of the barrier coating break down, or become less effective, there has been be a tendency for the adhesive to bond the two layers of label material together.

A label as aforesaid is most conveniently formed by print coating the first and second coatings onto a film substrate, and likewise print coating the third coating onto the surface of the adhesive.

Preferably all the coating materials are substantially transparent so that where printing has been applied to the label, below the coatings, it is visible therethrough.

Where instead, the information is to be printed onto the

adhesive surface, the information is preferably printed thereon before curing, and after being cured or air dried as appropriate, the transparent third coating is applied thereto, before the said second coating has been applied to the other side of the film. This process simplifies the handling of the label since once the third coating has been applied, and cured and/or dried, the treated surface can be covered by a backing sheet such as a film of Glassine or a plastics film coated with a suitable release agent such as Emiflex, and the laminated assembly can now be safely processed, as by passing it through a further printing or coating station to enable the said second coating to be applied thereto.

If the label is to bear printed information on the face which is to be coated with the said second coating, the printing is preferably performed after lamination and before the said second coating is applied.

UV curing or air drying steps may be provided after each printing or coating step.

Preferably a plurality of such labels are formed in rows and columns along a length of plastics film material.

Where the rows extend transversely the columns will extend parallel to the length of film, which may be many meters or hundreds of meters long, and can be wound on, unwound from, and re-wound on bobbins.

Using known techniques of semi-cutting and trimming, regions of the coated film material between the label can be removed so that the now separated labels are only joined by the backing sheet.

Normally the labels have to be dispensed in sequence one after another at a labelling station to which unlabelled containers are conveyed and presented and from which labelled containers

are synchronously moved one after the other. The columns of labels are therefore preferably separated by guillotining at regular intervals across the width of the laminated product. The labels extend end to end parallel to the length dimension of each guillotined strip with the trailing end of one label just ahead of the leading end of the next, and the long narrow lengths of backing sheet containing the long lines of labels can be wound up on individual bobbins.

The labels can be peeled successively in known manner one after the other from the backing sheet, to be wrapped in turn around the containers. The empty backing sheet is led away from the labelling station to be wound around take-up bobbins.

In accordance with another aspect of the invention, the problems of mis-alignment of a self adhesive label as it is wrapped around a container can be obviated generally by forming the label so that its overall width is less at its leading end than at its trailing end. In this way if there is any tendency for axial shift of the label or vibration or wobble of the container during the application of the label thereto, the greater width of the trailing end of the label will tend to mask any imperfect winding of the earlier length of the label around the container.

Where such labels are supported on a backing strip and arranged end to end along the length thereof, the labels may be arranged on the backing sheet so that one edge is parallel to the length direction of the backing strip and the other edge is angled relative thereto.

Alternatively, both the opposed longer edges of each label may converge equally over the length of each label, so that the leading end is less wide than the trailing end thereof, and the labels are arranged end to end along the length of the backing strip with the leading and trailing ends perpendicular to the length dimension of the backing strip.

The non-parallel edges of each label may be obtained by appropriately cutting the labels without cutting the backing sheet before or after the laminate of label film and backing sheet is guillotined into the long strips of labels.

The trapezoidal label shape provided so as to overcome misalignment during application to the container, has a further advantage. By applying the label with the narrower region first the final flap of the label and particularly the trailing end thereof will be wider in extent than the remainder of the label and will provide at least one if not two triangular edge regions which can be gripped between finger and thumb to facilitate the removal of the separable peelable label parts from the remainder. To this end the adhesive may be print coated as a parallel stripe down the centre of the trapezoidal label so as to leave edge regions of the label of increasing width towards the trailing end which are uncoated with adhesive. If the whole label width is coated with adhesive, the said third coating for neutralising the effect of the adhesive must likewise be applied over the whole width so as to prevent the triangular flaps from adhering to the container or any underlying label material, to facilitate lifting the outer region(s) of the label for peeling back from the remainder of the label adhering to the container.

Where a reliable bond between the trailing end of the label and the lower layer(s) of label is required, a strip of adhesive is left exposed at the extreme trailing end of the label, but preferably not extending completely to both edges of the end of the label, to leave tags which do not in practice become stuck to the lower label layer(s) and/or container at one, or both, corners of the trailing end.

The invention also lies in a container have affixed thereto a label constructed as aforesaid.

The invention also lies in a method of making a label as

aforesaid comprising the steps of:

1. printing the underside adhesive face with printed matter
2. subjecting the printing to UV curing or air drying as appropriate depending on the ink involved
3. applying by print coating a thin coating of a suitable neutralising material such as Emiflex so as to cover a defined region of the adhesive coated surface of the label,
4. drying the neutralising material and if necessary, as in the case of Emiflex, exposing the neutralising material to ultra-violet light to cure the material and reduce the tackiness of the adhesive/coating combination
5. applying a backing sheet to the coated surface to protect the exposed regions of adhesive, the backing sheet being formed from material which does not form a permanent bond with the adhesive, or having a release coating of Emiflex or like material on that face which is to make contact with exposed adhesive on the label,
6. printing the other surface of the label with information (such as marketing information and the like),
7. air drying or curing the printed matter using ultra-violet light if appropriate, depending on the ink employed,
8. print coating the printed surface so as to form thereover a thin film of a release agent such as Emiflex and curing using ultra-violet light as appropriate, and
9. die cutting the label relative to the backing material and trimming the waste therefrom so as to leave labels lightly adhering to the backing material ready to be peeled away.

Where a multiplicity of labels are formed across the width of a web, the process may include the step of guillotining between the lines of labels so that the separate long lengths of labels can be wound up on separate bobbins for application to containers in known manner.

The invention also lies in a label containing a fragrance-emitting compound print coated or impregnated into a region of

the label which is normally sandwiched between turns of the label wrapped around a container to which it is to be applied, and the fragrance emitting material can be exposed to the air to permit the fragrance to be released by peeling back the label to expose the fragrant material.

The fragrance may be re-captured and re-exposed at a later time by resealing the flap of the label over the fragrant material, and peeling it back again, as required.

The same principle can be applied to printed material contained on the label surface which is to be hidden from view until a product is purchased. After purchase the outer flap of the label can be peeled away to expose the otherwise hidden information. This may comprise data, product information or a so-called lucky number or prize information, or a clue in a competition, an entry form, or a token or other device entitling the holder to a benefit or opportunity otherwise not available to the purchaser.

Illustrated embodiments of the invention

Self adhesive labels constructed in accordance with the invention will now be described by way of example, with reference to the accompanying drawings, in which:

Figure 1 is a plan view of the front surface of a label coated in accordance with the invention;

Figure 2 is a perspective view of the label of Figure 1 from the rear, not to scale;

Figure 3 is a schematic cross-section of the label (not to scale) on line II - II in Figure 2;

Figure 4 is a schematic cross-section of the label (not to scale) on line III - III in Figure 2;

Figure 5 is a perspective view of a container around which a label in accordance with the invention is being wound;

Figure 6 is a perspective view of the container of Figure 5 with the label fully applied;

Figure 7 illustrates how a narrow strip of adhesive can be left exposed at the trailing end of the label;

Figure 8 shows a longer label, with exposed adhesive strips defining the beginning of each additional length of label which can be wrapped around the container;

Figure 9 illustrates a tapering label constructed in accordance with the invention;

Figure 10 illustrates the effect of wrapping such a label narrow end first, around a container;

Figure 11 is a plan view of the underside of a tapering label showing one way in which the adhesive may be applied; and

Figure 12 is a similar view showing another way in which the adhesive can be applied.

Description of the drawings

As shown in Figure 1, an adhesive label 10 constructed in accordance with the invention has a leading end 12, which is the first end which is applied to a container around which it is to be secured, and a trailing end 14.

The outer surface of the label, visible in Figure 1, is coated over its entire area in known manner by a release agent such as Emiflex (Trade Mark). The coating of Emiflex is denoted by reference numeral 16, and is transparent to allow any printing to be on the label material visible therethrough.

As shown in Figure 2, the underside of the label is coated over its entire area, also in known manner, with an adhesive layer 18, and in accordance with the invention the second half (from the middle to the trailing end of the label) has applied thereto another layer of Emiflex (Trade Mark), as shown at 20. A backing sheet of plastics film or Glassine, denoted by 24 in Figures 3 and 4, is applied to the underside of the label, but for clarity has been omitted in Figures 1 and 2.

The length of the label from leading end 12 to trailing end 14 is equal to twice (or more) the perimeter of a container around which it is to be secured, such as the circumference of a cylindrical bottle, and in accordance with the invention, the leading end 12 of the label is presented to the container with the exposed adhesive coating 18 facing the container, so that as the leading end 12 is brought into contact with the container, it becomes stuck thereto. With rotation of the container, the label becomes progressively wrapped therearound. Since the exposed adhesive occupies a length of label which is equal to the circumference of the container, the junction 12 between the exposed region 18 and treated region 20 arrives at the surface of the container in registry with the leading end 12, so that continued winding of label around the container will result in the treated surface 20 overlying the label material already secured to the container.

Since the outer surface of the label is wholly coated with Emiflex as indicated by 16 in Figure 1, the bond between the underside of the second label half (between 22 and 14) and the first label half (between 12 and 22), will be determined by the bonding between Emiflex and Emiflex-coated adhesive. This has been found to be substantially constant, substantially unchanged by time and substantially unaffected by how often the two surfaces are separated and resealed. The actual bond is determined by the chosen adhesive and the thickness of the Emiflex coating applied thereto.

A preferred adhesive is S660 and a third coating of a few microns of Emiflex thereto, has been found to be sufficient.

The different layers making up the final label before it is applied to a container, are shown in Figures 3 and 4, in which a peelable backing sheet 24 is also shown applied to the rear surface to protect the exposed adhesive 18.

Although the central core 10 of the label may be paper, it may to advantage be a plastics film, or a laminate of such films, or a lamination of paper and plastics film.

In Figure 5 the axis of a cylindrical container 26 around which the label of Figures 1, 2 is to be wrapped, is denoted by X. In order to apply the label 10 to the container 20, the backing sheet 24 is peeled away and the leading end of the exposed adhesive 18 is brought into contact with the container 20, causing the label 10 to stick permanently to the container 26. The latter is then rotated about the axis X so that the remainder of the first half of the label wraps around the container and sticks to it. Thereafter the second half of the label becomes wrapped around the first half, with the treated surface 20 forming a controlled bond with the coated surface 16 of the first half of the label.

The first half of the label 10 is thus stuck permanently to the container 26, and cannot be removed without tearing. However, the second overlapping half is peelably stuck to the first half of the label.

As shown in Figure 7 the Emiflex coating may be stopped just in advance of the trailing end 14 so as to leave an exposed strip of adhesive 28, to ensure that the trailing edge will bond firmly to the underlying label already wrapped around and firmly bonded to the container 26.

As shown, the label is twice the length of the circumference

of the container 26 so that the label overlaps itself only once around the container as shown in Figure 6.

If desired, the label could be longer, such as three times or four times the circumference of the container 26, so as to enable additional overlaps to occur around the container.

Figure 8 shows such a longer label in which each of the Emiflex coated regions 20, 30, 32 on the underside is separated by a strip of exposed adhesive at 28 and 34, and the trailing end of the long label includes an exposed strip of adhesive at 36.

Labels in accordance with the invention are advantageous in that printed matter can be located on the whole front surface 12 thereof and on the underside of each overlapping portion of the rear surface 16.

The use of a release coating 14 both on the front surface 12 and the overlapping portion 1111 of the rear surface, allows a powerful permanent adhesive to be used to prevent removal of the label 10 from container such as 26 whilst ensuring peelability of the overlapping portion.

In Figure 9 is shown a label 38 constructed in the same way as described herein in relation to Figures 1 to 4, but in which the width of the label increases from the leading end 40 to the trailing end 42. This is most simply obtained by appropriately cutting the label material (if not also the associated backing sheet such as 24 (see Figures 3 and 4)). The label 38 is shown with its leading end just being applied to a bottle 44, which is to be rotated to cause the label to be wrapped around the bottle, and become stuck thereto.

The advantage of the increasing width is illustrated in Figure 10, where the label 38 is shown fully wrapped around the bottle 44 and around itself. As will be seen, the wider trailing end 42 encompasses within its width all of the narrower lower layer

of the label, so that if the latter has not wrapped evenly around the bottle, but has begun to described a helical path (as can occur for various reasons), any imperfections in the winding will be covered up by the later, wider section of label.

Figure 11 shows one way of applying adhesive to the reverse of the label 38 in the form of a parallel sided stripe 46 the width of which is the same as the width of the narrower end of the label, so as to leave two edge regions of increasing width clear of adhesive. Emiflex can be print-coated over the stripe 46 alone, or over the whole underside of the label, except at 48 and 50 so as to leave exposed adhesive over the first half of the label at 48, and in the perpendicular strip at 50 to assist in firmly securing the trailing end of the label to the lower layer of label.

Figure 12 shows an alternative arrangement in which adhesive is applied over the whole of the trapezoidal area of the label 38 and Emiflex is print-coated as shown over the area 52 so as to prevent the edges of wider section of the label from becoming stuck down, and thereby assist in peeling the outer layer(s) of label away from the lower layer(s). The strip of exposed adhesive at 56 keeps the outermost end firmly in place, until the peelable layer is to be removed.

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Claims

1. In a label which is to be secured around a container and whose length is equal to at least twice the perimeter of the container, and which includes a leading end which is first applied to the container and a trailing end which is the last part of the label to be secured in place, and in which the face thereof which is to make contact with the container includes a first coating of adhesive extending from the leading to the trailing end of the label, and in which the opposite face of the label includes a second coating of an adhesive-repellant material so as to reduce the tendency of the tacky underside of the label to stick to the outer surface of the label as it is wrapped around itself, the improvement comprising a third uniform coating applied to at least part of the surface of the first coating of adhesive, between the trailing end of the label and a point spaced from the leading end of the label by a distance equivalent to the perimeter of the container around which the label is to be secured, the thickness and/or physical and/or chemical characteristics of the material forming the said third coating being selected so as to permanently alter and reduce the attraction of the adhesive first coating for the material of the second coating where the former has been coated with the said third coating.

2. A label according to claim 1 in which the third coating extends over the full width of the label but not completely to the trailing end of the label so that a narrow band of uncoated adhesive is left exposed on the underside of the label for more firmly securing the trailing end of the label to the coated surface of the label already wrapped around the container.

3. A label according to claim 1 or claim 2 in which, where the label is to be wrapped more than twice around the container, the said third coating is selectively applied to the adhesive

coating so as to leave exposed narrow transversely extending strips of adhesive at selected distances along the length of the label.

4. A label according to claim 3 in which, in order to facilitate the removal of one or more such regions of the label, perforations or semi-cuts or other separation facilitation means are provided adjacent or in line with each of the transversely extending strips of exposed adhesive.

5. A label according to claim 4 in which the separation means extend transversely parallel to each strip of exposed adhesive on the underside of the label.

6. A label accordingly to claim 4 or claim 5 in which the separation means is located approximately half way across the width of the strip of exposed adhesive, measured in the length direction of the label.

7. A label according to any one of claims 3 to 6 in which at least one end region of each transversely extending strip of exposed adhesive is coated with the said third coating material so as to prevent the said one end region of the strip of exposed adhesive from firmly bonding to the label material therebelow.

8. A label according to any of claims 1 to 7 in which the material comprises a thin plastics film such as PVA or PVC, one surface of which is uniformly coated with S660 adhesive and the other surface of which is uniformly coated with a thin uniform coating of a release agent such as Emiflex (R.T.M.).

9. A label according to any preceding claim in which the third coating is a continuous film over the adhesive.

10. A label according to any of claims 2 to 9, in which, where the tack of any exposed region is also to be controlled, the

third coating material is also applied to the adhesive in those regions, but to a reduced thickness or as an incomplete film such as a pattern of dots.

11. A label according to any one of claims 1 to 10 in which the adhesion control is achieved by selecting for the adhesive one having high and low tack components, uniformly distributed throughout the material, and a material selected for the said third coating is one which contains a component which substantially neutralises the high tack component of the adhesive but leaves the lower tack component substantially unaffected.

12. A label according to any one of claims 1 to 9 in which the material selected for the adhesive is one which chemically reacts with the material selected for the said third coating so that the tack producing component of the adhesive is significantly reduced by the chemical reaction between it and the material forming the said third coating, so that the tackiness of the adhesive is significantly reduced in those areas to which the said third coating is applied.

13. A method of forming a label as claimed in any one of claims 1 to 12, in which the said third coating is applied to the adhesive coating before the second coating is applied to the other side of the film.

14. A method according to claim 13 in which the label is formed by print coating the first, second and third coatings.

15. A method according to claims 13 or 14 in which all the coating materials are substantially transparent so that any printing applied to the substrate film or one of the coatings is visible therethrough.

16. A method according to any of claims 13 to 15 in which the second and third coatings are of Emiflex the label is subjected

to ultra-violet light to assist in curing the Emiflex and cross-linking the Emiflex components with the unsaturated hydrocarbons present in the adhesive.

17. A method according to any of claims 13 to 16 in which a UV curing or air drying step is performed after each printing or coating step.

18. A method according to any of claims 13 to 17 in which a plurality of such labels are formed along a length of plastics film substrate material.

19. A method according to claim 18 in which the labels are arranged in rows and columns and the rows extend transversely and the columns extend parallel to the length of substrate and the laminated product is wound on bobbins.

20. A method according to claim 19 in which the columns of labels are separated by guillotining at regular intervals across the width of the laminated product, the labels extending end to end parallel to the length dimension of each guillotined strip with the trailing end of one label just ahead of the leading end of the next, and each long narrow lengths of backing sheet containing a long line of laminated labels is wound up on an individual bobbin.

21. A method according to any of claims 13 to 20 in which misalignment of a label as it is wrapped around a container is largely obviated by forming each label so that its overall width is less at its leading end than at its trailing end.

22. A method according to claim 21 in which the laminated labels are arranged end to end along the length of the backing sheet strip the labels being arranged on the backing sheet strip so that one edge is parallel to the length direction of the backing strip and the other edge is angled relative thereto.

23. A method according to claim 21 in which both the two longer edges of each label diverge equally over the length of each label, so that the leading end is less wide than the trailing end thereof and the labels are arranged end to end along the length of the backing strip with the leading and trailing ends perpendicular to the length dimension of the backing strip, so that both longer edges of each label are angled relative to the edges of the backing strip.

24. A method according to any of claims 21 to 23 in which the non-parallel edges of each label are obtained by appropriately cutting the labels without cutting the backing sheet, before or after the backing sheet is guillotined into the long strips of labels.

25. A method according to any of claims 21 to 24 in which the adhesive is print coated as a parallel stripe down the centre of each trapezoidal label, so that opposite edge regions of the label are uncoated with adhesive, or the whole width of the label is coated with adhesive and the said third coating for neutralising the effect of the adhesive is also applied across the whole width of the label, so as to prevent the triangular flaps from adhering to the container or label therebelow and facilitate lifting the outermost region of the label and peeling it back from the remainder of the label adhering to the container.

26. A container having affixed thereto a label constructed in accordance with any one of claims 1 to 12 or in accordance with the method of any one of claims 13 to 25.

26. A method of making a label comprising the steps of:

- 1) printing the underside adhesive face with printed matter,
- 2) subjecting the printing to UV curing or air drying as appropriate depending on the ink involved,
- 3) applying by print coating a thin coating of a suitable

neutralising material so as to cover a defined region of the adhesive coated surface of the label,

4) drying the neutralising material to reduce the tackiness of the combination,

5) applying a backing sheet to the coated surface to protect the exposed regions of adhesive, the backing sheet being formed from a material which does not form a permanent bond with the adhesive or having a release coating of Emiflex or like material on that face which is to make contact with exposed adhesive on the label,

6) printing the other surface of the label with information such as marketing information and the like,

7) air drying or curing the printed matter using ultra-violet lights if appropriate, depending on the ink employed,

8) print coating the printed surface so as to form thereon a thin film of a release agent such as Emiflex and cure using the ultra-violet as appropriate and,

9) die cutting the label relative to the backing material and trimming the waste therefrom so as to leave labels lightly adhering to the backing material ready to be peeled away.

27. A method according to claim 26, wherein the material forming the thin coating of neutralising material is Emiflex, and the thin coating is cured by ultra violet light and dried, before step 5 of claim 26.

28. A method according to claim 26 or claims 27 in which a multiplicity of labels are formed across the width of a web, and including the step of guillotining between the lines of labels so that the separate long lengths of labels can be wound up on separate bobbins for application to containers in known manner.

29. A label containing a fragrance emitting compound print coated or impregnated into a region of the label which is normally sandwiched between turns of the label wrapped around a container to which it is applied, wherein the fragrance

emitting material can be exposed to the air to permit the fragrance to be released by peeling back the label to expose the fragrant material.

30. A label according to claim 29 in which the fragrance emission can be interrupted by resealing the flap of the label, and the fragrance emitting material can be exposed again by unsealing and peeling back the label as required.

31. A label containing printed information which when the label is wrapped around a container is normally hidden from view and sandwiched between turns of the label whereby after purchase an outer region of the label can be peeled away by the purchaser to expose the hidden information.

32. Labels and a methods of forming a labels substantially as herein described.



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Claims searched: 1-26

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Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.O): B2E (EM); B8F (FBG)

Int Cl (Ed.6): C09J 7/02; G09F 3/02 3/10

Other: Online: WPI

Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
Y	EP 0239273 A2 (CETUS CORPORATION) see column 5, lines 21-50	1
Y	US 5342093 (WEERNINK) see column 3, lines 25-65	1
Y	US 4727667 (INGLE) see column 3, lines 13-66	1

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Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
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